Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-21. (Canceled).

22. (Currently Amended) A method of achieving tumor control and improved radiation efficacy in at least one human tumor in a patient in need of such tumor control, said method consisting essentially of

a. administering to said patient 5-chloro-2'-deoxycytidine and tetrahydrouridine in amounts effective to produce elevated levels of CldUMP and CldU in said at least one tumor,

and exposing said tumor to a level of radiation effective to delay the growth of said tumor,

wherein none of N(Phosphonacetyl)-L-Aspartate (PALA), 5-Fluoro-2'-deoxycytidine (FdC), 4-N-methyl 5-Fluoro-2'-deoxycytidine (4-N-methyl FdC) and 5-Fluoro-2'-deoxyuridine (FdU) is administered to the patient~~.~~ ,and thereafter

b. administering to said patient 5-chloro-2'-deoxycytidine and tetrahydrouridine in amounts effective to treat any surviving tumor cells in the surrounding tissue.

23. (Previously Presented) The method of claim 22, wherein the tumor is selected from the group consisting of a tumor of the breast, lung, brain, liver, kidney, ovary, uterus, testis, pancreas, gastrointestinal tract, head and neck, nasopharynx, skin, and prostate.

24. (Previously Presented) The method of claim 22, wherein 5-chloro-2'- deoxycytidine and tetrahydrouridine are administered in a slow release formulation.

25-27. (Canceled).

28. (Previously Presented) The method of claim 22, wherein said patient is a human.

29. (Previously Presented) The method of claim 22, wherein the radiation is selected from the group consisting of radiation from protons as a radiation source, radiation from a radiation source implanted proximal to the tumor, radiation in a gamma knife, 3D conformal radiation, and radiation in steriotactic radiosurgery.

30. (Previously Presented) The method of claim 28, wherein said radiation is from a radiation source comprising yttrium 90 needles or iridium needles implanted proximal to said tumor.

31. (Previously Presented) The method of claim 28, wherein said radiation is from yttrium 90.

32. (Currently Amended) A method of treating a human cancer patient, said method comprising the steps of

a. administering to said cancer patient 5-chloro-2'-deoxycytidine and tetrahydrouridine in amounts effective to achieve tumor control and therapeutic efficacy when combined with an effective level of radiation to treat said cancer patient,

and exposing said cancer patient to a level of radiation effective to delay the growth of said tumor,

wherein none of N(Phosphonacetyl)-L-Aspartate (PALA), 5-Fluoro-2'-deoxycytidine (FdC), 4-N-methyl 5-Fluoro-2'-deoxycytidine (4-N-methyl FdC) and 5-Fluoro-2'-deoxyuridine (FdU) is administered to the patient. ,and thereafter

b. administering to any surviving tumor cells and the surrounding tissue 5-chloro-2'-deoxycytidine and tetrahydoruridine.

33. (Previously Presented) The method of claim 32, wherein said cancer patient is selected from the group consisting of a breast cancer patient, a lung cancer patient, a brain cancer patient, a liver cancer patient, a kidney cancer patient, an ovary cancer patient, a uterus cancer patient, a testis cancer patient, a pancreas cancer patient, a gastrointestinal tract cancer patient, a head and

neck cancer patient, a nasopharynx cancer patient, a skin cancer patient, and a prostate cancer patient.

34-38. (Canceled).

39. (Previously Presented) The method of claim 32, wherein the radiation is selected from the group consisting of radiation from protons as a radiation source, radiation from a radiation source implanted proximal to the tumor, radiation in a gamma knife, 3D conformal radiation, and radiation in steriotactic radiosurgery.

40. (Previously Presented) The method of claim 32, wherein said radiation is from a radiation source comprising yttrium 90 needles or iridium needles implanted proximal to said tumor.

41. (Previously Presented) The method of claim 32, wherein said radiation is from yttrium 90.

42. (Previously Presented) The method of claim 32, wherein only 5-chloro-2'-deoxycytidine and tetrahydrouridine are administered to said cancer patient.

43. (Previously Presented) The method of claim 22, wherein said method sensitizes said tumor to radiation by a factor of at least about 3 fold as measured by comparing the effective dose of radiation to treat said tumor when said tumor is sensitized and the effective dose of radiation to treat said tumor when said tumor is not sensitized.

44. (Previously Presented) The method of claim 22, wherein said radiation is delivered in fractions.

45. (Previously Presented) The method of claim 22, wherein said tumor is metastatic.

46. (Previously Presented) The method of claim 22, wherein said tumor is a prostate tumor.

47. (Previously Presented) The method of claim 32, wherein said radiation is delivered in fractions.

48. (Previously Presented) The method of claim 32, wherein said patient is a prostate cancer patient.

49. (Previously Presented) The method of claim 22, wherein said tumor is associated with hypermethylation.

50. (Previously Presented) The method of claim 22, wherein said tumor is selected from the group consisting of lung, rectum, breast, head and neck, brain, pancreas and cervix tumors.

51. (Previously Presented) The method of claim 22, wherein said tumor is selected from the group consisting of head and neck and pancreas tumors.

52. (Previously Presented) The method of claim 32, wherein said tumor is associated with hypermethylation.

53. (Previously Presented) The method of claim 32, wherein said cancer patient is selected from the group consisting of a lung cancer patient, a rectum cancer patient, a breast cancer patient, a head and neck cancer patient, a brain cancer patient, a pancreas cancer patient and a cervix cancer patient.

54. (Previously Presented) The method of claim 32, wherein said cancer patient is selected from the group consisting of a head and neck patient and a pancreas cancer patient.

55. (Previously Presented) The method of claim 22, wherein said tumor is associated with gene silencing.

56. (Previously Presented) The method of claim 22, wherein said tumor has elevated enzymatic activities of deoxycytidine kinase and dCMP deaminase in tumor cells compared with normal cells.

57. (Previously Presented) The method of claim 32, wherein said cancer patient is suffering from a tumor associated with hypermethylation.

58. (Previously Presented) The method of claim 32, wherein said cancer patient is suffering from a tumor associated with gene silencing.

59. (Previously Presented) The method of claim 32, wherein said cancer patient is suffering from a tumor with elevated enzymatic activities of deoxycytidine kinase and dCMP deaminase in tumor cells compared with normal cells.